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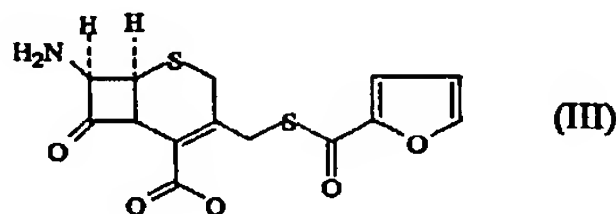
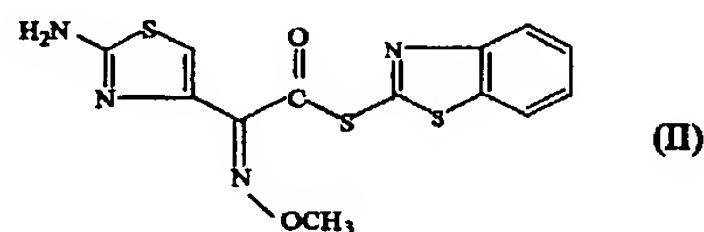
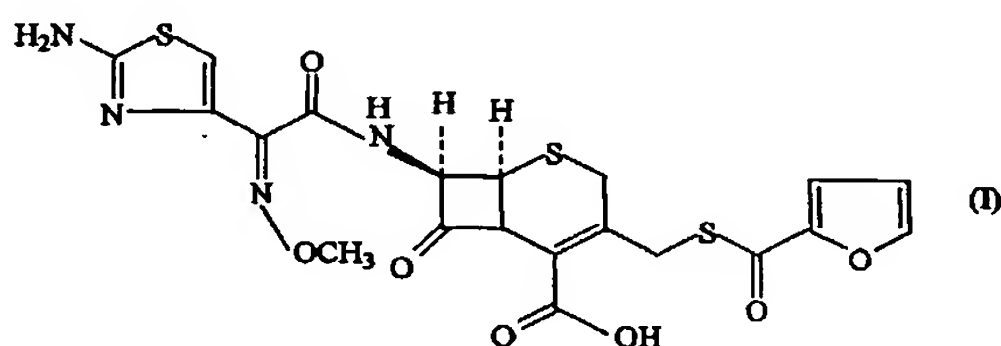
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(54) Title: A METHOD FOR MANUFACTURE OF CEFTIOFUR



(57) Abstract: A process for preparation of ceftiofur of formula (I) of high purity and substantially free from impurities is disclosed. The process comprises reacting [2-(2-aminothiazol-4-yl)]-2-syn-methoxyimino acetic acid-2-benzothiazolyl thioester of formula (II), with 7-amino-3-(2-furanylcarbonylthiomethyl)-3-cephem-4-carboxylic acid of formula (III) in the presence of a mixture of an water-immiscible inert organic solvent and water and in the presence of an organic base and isolating ceftiofur of formula (I) substantially free of impurities by, d) adding water to the reaction mixture and selectively partitioning the impurities in the organic phase and ceftiofur (I) in the form of a salt with the base in the aqueous phase, e) acidifying the aqueous phase containing ceftiofur (I) in the form of a salt with the base in the presence of a mixture containing a water-miscible and a water-immiscible organic solvent and in the presence of a saturated aqueous solution of an alkali or alkaline earth containing salt, to partition ceftiofur (I) in the organic phase, and f) isolating ceftiofur (I) of high purity and substantially free of impurities by evaporation of the organic solvent or precipitation by addition of a co-solvent.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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# INTERNATIONAL SEARCH REPORT

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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

CHEM ABS Data, EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; Database accession no. 2001:606938 XP002282591 abstract & ZHU, YANG ET AL: "Synthesis of ceftiofur" ZHONGGUO YIYAO GONGYE ZAZHI, vol. 32, no. 6, 2001, pages 241-242, ---	1-18
X	US 4 937 330 A (DILL LOREN H ET AL) 26 June 1990 (1990-06-26) cited in the application claim 3; example 2 --- -/--	19

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 6 388 070 B1 (DESHPANDE PANDURANG BALWANT ET AL) 14 May 2002 (2002-05-14) cited in the application example XI</p> <p>-----</p>	1-18

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